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Sustainable agriculture and rural development: trends in national implementation

Report of the Secretary-General

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Introduction

1. In 1999, at its seventh session, the Commission on Sustainable Development encouraged Governments to continue providing voluntary national reports and information on the implementation of Agenda 21[1] at the national level. The Commission also requested the Secretariat to process and compile, on a sectoral basis, the information provided by Governments in accordance with the issues contained in its multi-year programme of work, as stipulated in Commission decisions 7/5[2] of 30 April 1999, and 6/5[3] of 1 May 1998.

2. In response, the Division for Sustainable Development of the United Nations Secretariat prepared the present report. It examines the progress made towards sustainable agriculture and rural development (SARD) based on the information that Governments have provided in their national reports to the Commission on Sustainable Development. This report analyses a total of 133 reports on SARD, submitted to the Commission in 1997 and 2000.

3. Consistent with Agenda 21 programme areas on SARD, this report focuses on major policy trends, programmes and activities concerning SARD, by region and subregion.

I. National progress towards sustainable agriculture and rural development (SARD)

General achievements and challenges among reporting countries

4. According to the national reports, progress has been made, in particular, in the following areas:

- The establishment of national policy and legal frameworks for SARD;
- The integration of environmental considerations in SARD policy and activities;
- Decentralization of decision-making to regional and local levels of authority;
- Participation of major groups in decision-making and SARD activities;
- Development of human resource capacity through training, education and extension;
- Review of land tenure policy;
- Research and development for the protection of animal and plant genetic resources.

Priorities related to sustainable agriculture and rural development were cited in the following areas:

- Food security;
- Water resources conservation and management;
- Protection of underground water and surface-water bodies from pollution;
- Sustainable land use and recuperation of degraded land and soil;
- Rural poverty alleviation;
- Rural development;
- Competitiveness of national agricultural products in international markets;
- Integrated Pest Management (IPM);
- Mitigation of the effects of desertification, drought and natural disasters.

II. Regional trends

Methodology and regions

5. Countries throughout the world reported significant differences in the design and implementation of SARD activities related to chapter 14 of Agenda 21. The present section summarizes, by region and subregion, the main priorities and challenges, developments in decision-making and activities at the national level to promote SARD (see annex for a breakdown in tabular form of the main priorities/challenges, activities and programmes for SARD by region). All descriptions are compiled on the basis of national information on SARD provided to the Commission on Sustainable Development by 14 January 2000.

6. Regions include:

Europe and the Commonwealth of Independent States

Eastern Europe and the Commonwealth of Independent States

Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Malta, Poland, the Republic of Moldova, Romania, the Russian Federation, Slovakia, Slovenia, Tajikistan, the former Yugoslav Republic of Macedonia, Turkmenistan, Ukraine, Uzbekistan and Yugoslavia.

Western Europe

Andorra, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Monaco, the Netherlands, Norway, Portugal, San Marino, Spain, Sweden, Switzerland, Turkey and the United Kingdom of Great Britain and Northern Ireland.

Africa

East Africa

The Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia, Uganda and the United Republic of Tanzania.

West Africa

Benin, Burkina Faso, Cameroon, Cape Verde, the Congo, Côte d'Ivoire, the Democratic Republic of the Congo, Equatorial Guinea, Gabon, the Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, the Niger, Nigeria, Senegal, Sao Tome and Principe, Sierra Leone and Togo.

Southern Africa

Angola, Botswana, Lesotho, Malawi, Namibia, South Africa, Swaziland, Zambia and Zimbabwe.

North Africa

Algeria, Egypt, Morocco and Tunisia.

Central Africa

Burundi, the Central African Republic, Chad, the Congo, the Democratic Republic of the Congo, Rwanda and the Sudan.

The Americas

The Caribbean

Antigua and Barbuda, Bahamas, Barbados, Cuba, Dominica, the Dominican Republic, Grenada, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Trinidad and Tobago.

Latin America

Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela.

Canada and the United States of America

Asia and the Pacific

Western Asia

Afghanistan, Bahrain, Cyprus, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, the Libyan Arab Jamahiriya, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, the United Arab Emirates and Yemen.

East Asia

China, the Democratic People's Republic of Korea, Japan, Mongolia, and the Republic of Korea.

South-East Asia

Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam.

South Asia

Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.

The Pacific and Oceania

Australia, Fiji, Kiribati, the Marshall Islands, Micronesia, New Zealand, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu.

7. The regional descriptions are indicative only, since:

- Not all countries of the region have reported to the Commission on Sustainable Development on issues related to chapter 14 of Agenda 21;
- The amount and detail of information provided by Governments in the individual reports vary significantly.

Europe and the Commonwealth of Independent States (CIS)

8. **Eastern Europe and the CIS**: the following nations have submitted information to the Commission on Sustainable Development: Albania (1997), Armenia (1997), Bulgaria (1997), Croatia (1997), Czech Republic (1997), Estonia (1997 and 2000), Hungary (1997), Kazakhstan (2000), Lithuania (1997 and 2000), Poland (1997), the Republic of Moldova (1997), Romania (1997), the Russian Federation (1997 and 2000), Slovakia (1997 and 2000), Slovenia (1997 and 2000), the former Yugoslav Republic of Macedonia (1997), Ukraine (1997) and Uzbekistan (1997). Those that have not submitted information to the Commission include: Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kyrgyzstan, Latvia, Malta, Tajikistan, Turkmenistan and Yugoslavia.

9. One of the main priorities of the region concerns agricultural reform through privatization of the agricultural sector. Loss of agricultural subsidies and decrease in State budgets due to the shift from centralized planning to market economies have led to placement of emphasis on efficient production, food security and marketing of agricultural products.

10. All countries reported on the linkages between environmental conservation and SARD. Sustainable land-use practices, including initiatives to combat soil erosion and reduction of pesticide use, were strongly articulated. Most countries reported on a decrease in the use of pesticides, given the collapse of large-scale farming systems and extensive use of chemicals. A lack of sound quality of surface-water and groundwater resources, as an impediment to sustainable agricultural development, was also noted. In Slovenia, legislation has been created to narrow the imbalance created by fertilizer use in crops in areas near shallow groundwater resources.

11. Redistribution of land into small private landholdings was also cited as a major strategy to improve family income as well as to contribute to more sustainable agricultural practices in the region. Hungary reported that agriculture and regional development were also a concern for labour policy. Special attention is paid to underdeveloped regions and rural areas where agriculture is one of the main sources of income.

12. This region showed concern for an increase in the agro-business to ensure food security and self-sufficiency. Slovakia has developed a Programme of Comprehensive Support to Small and Medium-Sized Enterprises which defines policies that identify State support and objectives related to SARD. In the area of food security, the Russian Federation seeks to attain conformity in respect of the quality of the food products produced and made by its citizens. In addition, all organizations involved in the production, storage and marketing of food products, regardless of the type of ownership and production capacity, are subject to State monitoring.

13. Countries recognize that investment in human resource development is necessary not only for raising living standards in general, but also for a proper understanding of ecosystems and related agricultural production. Albania, Croatia, Lithuania and Poland provide education and extension services to farmers. In Albania, the Ministry of Education and the Ministry of Agriculture collaborate on vocational agricultural education initiatives. New rural business training centres have been established in Lithuania where farmers and rural businessmen can learn about environmental protection, new technologies, improving the quality of agricultural products, management and marketing.

14. Reinforcement of national programmes and activities through decentralized decision-making and capacity-building has been undertaken by most of the countries in this region. Activities range from development of farmer support groups to the establishment of central and regional development councils, as in Hungary, which are responsible for

regional planning, priority setting and allocation of financial resources for various regional development projects. Through the Estonian Village Movement, rural communities have been active in appealing to the Estonian Government for assistance in rural development issues. The first Rural Assembly for Villages was held in Estonia in 1996 and concluded with the formation of the Estonian Movement of Villages and Small Towns (KODUKANT), a non-governmental organization. Lithuania reported on the involvement of major groups in this sector through its Chamber of Agriculture, which is a voluntary union comprising farmers, producers, suppliers of "intellectual services" and representatives of agricultural interest groups. The Chamber of Agriculture represents these interests in State governmental institutions and authorities, and cooperates with foreign institutions.

15. International and regional cooperation is important to the region. Croatia reported that regional cooperation is undertaken through the Alps-Adriatic and Danube Regional Community Programme, and among the Baltic States. The Food and Agriculture Organization of the United Nations (FAO), the European Union (EU) Phare Programme[4] and the World Bank were cited by countries as active in sustainable agricultural initiatives.

16. **Western Europe:** the following countries reported to the Commission on Sustainable Development: Austria (1997 and 2000), Belgium (1997 and 2000), Denmark (1997), Finland (1997 and 2000), France (1997), Germany (1997 and 2000), Greece (1997), Iceland (1997 and 2000), Ireland (1997), Luxembourg (1997 and 2000), Monaco (1997 and 2000), the Netherlands (1997), Norway (1997 and 2000), Portugal (1997), Spain (1997), Sweden (1997 and 2000), Switzerland (1997), Turkey (1997) and the United Kingdom (2000). Those that did not report to the Commission include: Andorra, Italy, Liechtenstein and San Marino.

17. Western European countries have established policy frameworks to advance SARD. The 1996 Environment Council of the EU[5] agreed that securing sustainable agriculture is one of the key priority areas in their review of EU's fifth Environment Programme. A number of initiatives to encourage environment-friendly farming, which are governed by European Commission (EC) agri-environmental regulation 2078/92 to be replaced by Rural Development Regulation 1257/99[6] from 1 January 2000, were reported.

18. Through the creation of Agenda 2000, rural development has become the second pillar of the EU Common Agricultural Policy. The main objective is to protect the social structure of rural areas and promote the establishment of environment-friendly farm management systems. Austria has sought to develop rural areas through information and communication technology, promoting a project that distributes computers, software and Internet access to farmers who thereby engage in tele-learning, teleworking and electronic publishing. In Germany, farmers are invited to participate in special *Laender* (States) programmes for the agricultural sector, which combine both environmental concerns and economic requirements. Today, these programmes cover nearly 30 per cent of the agricultural landscape in Germany. In addition, cooperation among agriculture, commerce, crafts and services is also encouraged in Western Europe.

19. A priority of the region involves reduction in the pollution of surface-water and underground water bodies, as reported by Austria, Denmark, Finland, France, Greece, Ireland, Luxembourg, the Netherlands, Sweden and the United Kingdom. Particular concern was given to the stabilization of nitrate levels in water supplies. For this purpose, the United Kingdom has designated 72 Nitrate Vulnerable Zones under EC Nitrate Directive 91/676. Since December 1998, farmers within the Zones have been required to comply with mandatory measures to control nitrate pollution from agriculture. These include requirements to limit applications of fertilizers and organic manure and to observe closed periods for fertilizer and some applications of livestock manure, as well as rules on record keeping, waste handling and storage facilities. Belgium reported that overuse of nutrients (from both animal waste and chemical fertilizers) is a major cause of low soil productivity.

20. A number of European countries reported on linkages between sustainable agriculture sector performance and structural measures taken to ensure the productivity and competitiveness of the agricultural market. In Austria, the purchase of agricultural and forest land and farms and their subsequent sale to local farmers, allows farmers to expand their activities and secure their economic viability. There is also a special assistance scheme for mountain farmers, whose agricultural and forest management is difficult owing

to their location in mountain areas. Germany's Joint Task of Agrarian Structure and Coastal Protection promotes the marketing of agricultural products from ecological farming. Eighty-eight per cent of active farms in Finland participate in a scheme in which farmers design an environmental management programme to reduce the use of pesticides and increase plant cover in exchange for a premium. In light of increased demand for urban and related infrastructure developments, Luxembourg has developed regional and national land management planning schemes so as to set aside land for the exclusive use of agricultural production. For those farmers that engage in environmentally sustainable agricultural practices, Switzerland provides direct supplementary income payments.

21. Protection of livestock breeds was also noted to be a concern of European countries. In this regard, Austria targets its activities towards the in situ conservation of cattle, horses, sheep and goats, while farmers who retain endangered female breeding animals receive financial bonuses. Germany supports endangered farm animal breeds (cattle, sheep, goat and horse species), while Norway undertakes measures for maintaining the reindeer breed in consultation with the Sami people, an ethnic group indigenous to Norway. Iceland cited a need to reduce the number of horses by improving breed management strategies. Luxembourg reported establishing a programme to support rare species of livestock, while Switzerland has conducted research on sustainable production methods for vegetable and animal breeding.

22. The majority of European nations reported on initiatives to ensure people's participation and human resource development for SARD. Countries include Belgium, France, Germany, Iceland, Ireland, Luxembourg, Norway and the United Kingdom. In France, the Ministry of Agriculture, in collaboration with various training and research organizations, undertakes activities to promote self-reliance among farmers. The Committee for the Reduction of Water Production by Nitrates, Phosphates and Phytosanitary Products (CORPEN) is a French organization composed of various actors who are engaged in the protection of water bodies. CORPEN provides thematic and programmatic advice to the appropriate government Ministers, in addition to technical support for international negotiations. The German NGO Forum for Environment and Development founded a working group on sustainable agriculture with some 40 representatives of environment, development, farmers' and rural population organizations. Several conferences have been held and a study carried out on the "Implications of Agenda 21 for Revision of the German Plant Protection Act". In addition to initiating a "Farmers Reclaiming the Land" programme, Iceland's Soil Conservation Service has been active in publishing information and guidelines for schools, farmers and the general public on soil erosion.

23. The use of renewable energy sources to ensure sustainable agricultural production and rural development was reported by Austria, Denmark, Finland, Germany, Iceland and Norway. Austria has initiated a programme for environmentally sound energy use in rural communities by the year 2000. Denmark encourages the sustainable development of renewable energy sources and improved efficiency, while Finland promotes indigenous renewable energy sources through energy taxation and grants. Tax exemptions for biofuels and research and development in the field of renewable resources have been undertaken by Germany for over 15 years. Norway noted an increase in the use of biomass systems in rural areas. Iceland reported that environmentally sound energy transition in rural communities has been completed.

24. International and regional cooperation in SARD was reported by almost all of the European countries. International cooperation through EU policies and agreements was most frequently cited by countries. International organizations such as the Organisation for Economic Cooperation and Development (OECD), FAO, and the International Fund for Agricultural Development (IFAD) were also mentioned. Exchange of information, capacity-building and transfer of technology are the major components of bilateral cooperation in the region. The Belgium Agency for Development Cooperation has implemented agricultural projects in 11 African countries, 3 Asian countries and 3 Latin American countries. In the Netherlands, 20 per cent of Dutch official development assistance (ODA) is allocated to agriculture and rural development, focusing on sustainable land use, sustainable livestock production and integrated pest management. Extensive subregional cooperation is undertaken among Scandinavian countries. Finland cited its commitment to The Baltic 21 Action Programme, which establishes goals for sustainable

agricultural development in the region and encourages participation by local farmers and citizens. A number of programmes and organizations have been established under the auspices of the Nordic Council of Ministers.

Africa

25. **East Africa**: the following countries have submitted information to the Commission on Sustainable Development: Madagascar (1997), Mauritius (1997), Uganda (1997), and the United Republic of Tanzania (1997). The following countries have not submitted information to the Commission: the Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Mozambique, Seychelles and Somalia.

26. Madagascar, Uganda and the United Republic of Tanzania reported on the existence of sustainable agricultural policy in their respective countries. Uganda has formed 15 working groups to address integrated programmes and approaches with regard to food security and sustainable development.

27. All countries reported on activities to improve land management planning and policy, with particular concern for the conservation and recuperation of marginal soils. For this purpose, Mauritius has conducted an island-wide land resource appraisal on marginal soils, and Madagascar is developing 4,000 "mini-projects" at the local level to address soil protection and land erosion.

28. The United Republic of Tanzania has stipulated through its National Land Policy that shifting cultivation will be controlled through the allocation of land to peasants on a tenure basis. Meetings have been held to review land tenure and landholding size, strengthen land-use and resource planning, and establish programmes for degraded land in Uganda.

29. Madagascar, Mauritius and Uganda are engaged in advancing integrated pest management practices and developing integrated plant nutrient systems to replace the use of chemical inputs.

30. Madagascar and the United Republic of Tanzania reported the use of renewable energy resources in the agricultural sector.

31. Major groups are involved in activities to address sustainable agriculture in Mauritius and Uganda. Uganda also reported that policy is being revised in order to include community participation in rural development.

32. **West Africa**: the following countries have submitted information to the Commission on Sustainable Development: Benin (1997), Cameroon (1997), Côte d'Ivoire (2000), Guinea-Bissau (1997), the Niger (1997), Nigeria (1997) and Senegal (2000). The following countries have not provided information to the Commission: Burkina Faso, Cape Verde, the Congo, the Democratic Republic of the Congo, Equatorial Guinea, Gabon, the Gambia, Ghana, Guinea, Liberia, Mali, Mauritania, Sao Tome and Principe, Sierra Leone and Togo.

33. Among the main concerns of the region are food security, diversification of agricultural products and exports, recuperation of degraded land, farmer self-sufficiency, sustainable forestry, and management and capacity-building in the area of water resources. Key actions identified for the advancement of SARD include privatization, capacity-building within the public sector, savings and credit schemes for small farmers, inventory and monitoring of soils and water resources, and research on collection and regeneration of genetic resources. Lack of financial resources and human resource capacity were noted as the major constraints on the realization of projects.

34. Half of the countries reported on the effects of demographic pressures on natural resources and agrarian and productive structures. Internal conflicts, the movement of refugees, rural-urban migration and an increasing demand for new land area for cultivation were reported by Guinea-Bissau. Nigeria has undertaken initiatives to open up new lands so as to increase the number of farm communities and food production.

35. Countries seek to increase the participation of women, local communities and young farmers in SARD activities. In Côte d'Ivoire, these groups have been involved in the development of the Landowners' Code (*Code foncier*). Through awareness-raising activities and training, Côte d'Ivoire has engaged the participation of major groups through the Centres for Rural Professions (*Centres des métiers ruraux*) project which aims to provide courses to rural citizens on agricultural and environmental subjects that are requested at the initiative of the local community. Half of the participants in this project are women, and 75 per cent are youth.

36. Very little information was reported on the use and diversification of energy for sustainable agriculture in this region. Côte d'Ivoire reported on a sustainable rural energy transition to enhance productivity through encouraging the use of renewable sources of energy and alternative technologies. A rural electrification programme is expected to provide electricity to more than 800 rural villages by the year 2000.

37. Cooperation in the areas of technology transfer, data collection, human resource development and training, research on irrigation strategies, and preservation of plant and animal genetic resources is needed. Countries reported that increasingly low levels of ODA on the part of donor countries compromise their capacity to undertake initiatives in these areas.

38. **Southern Africa**: the following countries have submitted information to the Commission on Sustainable Development: Botswana (1997), Malawi (1997), South Africa (1997) and Zimbabwe (1997). Those that have not submitted information to the Commission include: Angola, Lesotho, Namibia, Swaziland and Zambia.

39. The persistence of drought, infertility of soils, land degradation and problems of food security particularly threaten the region. The main challenges include increasing agricultural productivity of large (Malawi) and small (Botswana, South Africa, Zimbabwe) farms, activities to improve land conservation and planning, development of sustainable fertilizer strategies and improvement of small-farmer livelihoods.

40. Agricultural policy review and related legislation are being undertaken in all countries. Agrarian reform and land tenure initiatives have been addressed by Botswana and South Africa.

41. Rural development activities were reported by South Africa and Zimbabwe. For this purpose, Zimbabwe has introduced rural electrification programmes, identified alternative energy sources (solar and wind) and fuel-saving stoves to help combat land degradation. Provincial governments are responsible for rural development in South Africa and are engaged in the process of formulating integrated rural development policies.

42. Farmers, universities and non-governmental organizations participate in SARD activities in Malawi and South Africa. A South Africa Land Care initiative is being developed with the aim of increasing people's participation by means of a bottom-up approach so as to promote conservation awareness, capacity-building and rural development. In Zimbabwe, universities collaborate with the Ministry of Agriculture in the training of extension officers.

43. Botswana and South Africa have provided information on land resource planning through the survey and mapping of soils.

44. Efforts are under way to establish credit facilities to promote productivity in Malawi, South Africa and Zimbabwe. South Africa's Agricultural Credit Act makes provisions available to communal farmers, subsistence and beginning farmers, small farmers, and part-time and commercial farms. Farmers can also apply for various subsidies concerning drought assistance and conservation of natural resources.

45. International and regional cooperation is important to the region. The involvement of multilateral organizations such as FAO, the World Bank, the United Nations Development Programme (UNDP), EU and IFAD was reported. Bilateral cooperation with the German Technical Cooperation Agency (GTZ), the Danish International Development Agency (DANIDA), the United Kingdom and the United States Agency for International Development (USAID) was cited. Regional cooperation is undertaken through the Southern African Regional Commission for the Conservation and Utilization of the Soil (SARCCUS) and the Southern African Development Community (SADC). Zimbabwe coordinates the Southern Africa Development Conference Food Security Sector Programme, which has subsectors on agricultural research in Botswana; on animal production, livestock control, forestry, wildlife and fisheries in Malawi; and on environmental land management in Lesotho.

46. **North Africa**: the following countries have submitted information to the Commission on Sustainable Development: Algeria (1997), Egypt (1997), Morocco (1997), and Tunisia (1997).

47. Priorities for the region include food security, integrated land management, activities to mitigate desertification and drought, sustainable management of water resources, forest management and conservation, and the sustainable development of rural areas.

48. All countries emphasized sustainable rural development. For this purpose, new legal frameworks have been established in Morocco to promote SARD in rainy regions. Rural electrification and potable water projects have also been undertaken by Morocco. Through targeted investment, Algeria is undertaking initiatives to relieve population pressure by reorienting populations from human settlements in the north of the country to economically depressed rural regions. The provision of electricity, water, schools and other services has been undertaken in rural areas as a complement to regional development plans.

49. Participatory approaches and decentralized decision-making processes in the development of agriculture and rural development programmes were reported by Morocco and Tunisia. In Tunisia, women, youth and non-governmental organizations have benefited from employment-generating activities in the agricultural sector. These groups also engaged in activities in the areas of sustainable land-use planning, food security and the improvement of rural livelihoods.

50. Countries reported that further cooperation is needed in the areas of research and development, land-use planning, pest management and technology.

51. **Central Africa**: the following countries have not submitted information: Burundi, the Central African Republic, Chad, the Congo, the Democratic Republic of the Congo, Rwanda and the Sudan.

The Americas and the Caribbean

52. **The Caribbean**: the following nations have submitted information to the Commission on Sustainable Development: Antigua and Barbuda (1997), the Bahamas (1997), Barbados (1997), Cuba (1997 and 2000), the Dominican Republic (2000), Haiti (1997) and Jamaica (2000). Those that have not submitted information to the Commission include: Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Trinidad and Tobago.

53. All countries have developed, or are in the process of formulating, policy and legislation regarding sustainable agriculture, land use and rural development.

54. The lack of financial resources and human resource capacity in rural areas was noted as a major constraint on the advancement of sustainable agriculture in the region. In Cuba, migration from rural to urban areas was cited as a major challenge to rural development.

55. Women and youth organizations have been engaged in sustainable agricultural initiatives in the region. In Barbados, women and youth have been involved in issues ranging from food security, and enhancing self-reliance of farmers, to integrated pest management. In Haiti, women and youth organizations are very active in recommending to the Ministry of Environment project proposals related to SARD. In Cuba, women, small farmers and youth participate in decision-making at the local level. In Jamaica, with the assistance of the Rural Agricultural Development Authority, rural persons are being trained in agricultural and non-agricultural vocations. Through this initiative, women and youths are included in the programmes formulated.

56. Antigua and Barbuda, the Bahamas, Cuba, the Dominican Republic and Jamaica reported on the importance of considering linkages between sustainable agriculture and conservation of water resources.

57. Almost all countries reported on research and development activities related to sustainable agriculture. A network for Agriculture and Cattle Research Centres has been developed in Cuba to conduct research on new forms of appropriate technology. Cuban universities are involved in the fields of genetics, health and biotechnology, while three bio-pesticide plants have been created to help reduce the use of chemical inputs. International cooperation is also important in providing analysis of the agricultural sector, in the case of the Bahamas, and in the facilitation of regional and subregional workshops, in the case of Cuba.

58. **Latin America**: the following nations have submitted information to the Commission on Sustainable Development: Argentina (1997), Bolivia (1997 and 2000), Brazil (1997 and 2000), Chile (2000), Colombia (1997), Costa Rica (1997), Ecuador (1997 and 2000), Guyana (1997), Honduras (1997 and 2000) Mexico (1997 and 2000), Nicaragua (1997 and 2000), Panama (1997), Paraguay (1997 and 2000), Uruguay (1997) and Venezuela (1997). Those that have not submitted information to the Commission include:

Belize, El Salvador, Grenada, Guatemala, Peru and Suriname.

59. Key challenges within the region include rural poverty, food security and promotion of a competitive agricultural sector.

60. In most countries of this region, agriculture is the main provider of employment and family income. SARD was envisioned by many countries as an important means of alleviating rural poverty by raising the income of the rural poor. Paraguay has undertaken a study of the changes that are needed by the agricultural sector to increase its potential for improving economic conditions and the income of the rural population.

61. Rural poverty is a major challenge of the region. A strong emphasis on rural poverty alleviation was cited among countries of the region. Mexico has recently redirected the provision of direct food subsidies from the urban to the rural poor. Many countries reported having created mechanisms to increase the poor's access to financial resources through the provision of credit. A rural poverty programme in Bolivia seeks to improve conditions of the rural poor through training, credit, and microenterprise programmes. Chile has initiated a national contest that provides financing to small-scale women farmer organizations, in addition to credit programmes and the development of microenterprises targeted towards youth.

62. The need to develop the institutional capacity for SARD through decentralization policies and to strengthen institutions was emphasized by Bolivia, Ecuador, Nicaragua and Paraguay. Through the provision of technical support and capacity-building activities, Bolivia has undertaken initiatives to strengthen cooperation between the public sector and the private sector so as to stimulate the economy in rural areas.

63. Food security is a major priority of the region and a number of working groups, programmes and other activities have been conceived to protect those communities that are most at risk for nutritional deficiency. Most countries have elaborated projects to address sustainable food security as part of their SARD strategy. Honduras maintains a strategic reserve of grains, in case prices in the international market place drop.

64. Venezuela has promoted the consumption of non-traditional species as alternative sources of protein.

65. The importance of the rural sector in the generation of foreign exchange and as a source of input to primary and secondary sectors of the economy was articulated. To this end, the need to strengthen agricultural products in the international market place was reported by a number of countries, including Argentina, Bolivia, Brazil, Colombia, Costa Rica, Guyana, Honduras, Nicaragua and Paraguay. Argentina and Honduras reported on a reduction of subsidies directed to the agricultural sector. Bolivia, Honduras and Paraguay are promoting diversification of crops for agricultural export.

66. Almost half of the reporting countries have undertaken the restructuring of land tenure as a means of achieving sustainable agriculture. To this end, countries such as Bolivia, Brazil, Colombia, Ecuador, Nicaragua and Venezuela are attempting to address this issue through agrarian reform. Paraguay proposed creating a national institute for agrarian reform. Brazil has settled more than 160,000 families in recent years (1997-1998).

67. Participatory approaches are necessary to ensure the success of SARD polices. Attempts to integrate small producers in the decision-making process were undertaken in Argentina, Costa Rica and Mexico. In Ecuador, 90 local communities are engaged in assisting farmers in becoming self-sufficient. More than 20 indigenous communities participate in improving agricultural production and reducing risks to the ecosystem, and indigenous and Afro-Ecuadorian communities participate in land-use planning and management. Through workshops, training and other activities, indigenous groups, farmers, communities, women and youth participate in SARD activities in Mexico.

68. A number of countries have initiated activities for the sustainable use of plant and animal genetic resources. Bolivia reported on the creation of a national system for the conservation and use of genetic resources for agriculture and food. In Ecuador, indigenous communities participate in activities to promote sustainable agricultural practices and conservation of genetic resources. In Honduras, universities assist in the creation of gene banks for agricultural species and other species of flora. Chile reported on the creation of national programmes for the conservation of genetic resources. Regional cooperation among Andean countries and the members of the Southern Cone was also reported for this programme area.

69. Very few countries have initiated activities to promote sustainable plant nutrition so as to increase food production. Ecuador has launched a national programme to study plant nutrient sources. Bolivia also reported on activities in this area.

70. **Canada and the United States**: Canada (1997) and the United States (1997 and 2000) submitted information to the Commission on Sustainable Development.

71. The key challenges to sustainable agriculture and the agri-food sector in this subregion include: conservation of soil resources, surface-water and groundwater quality, water quality management, sustainable management of wildlife habitat, air quality and climate change, energy efficiency, pollution and waste management, and conservation of genetic resources.

72. *Canada (1997)*: Canada reported that key decisions regarding investment in more environmentally sustainable practices are being made at the farm level. F rs are forming rural conservation clubs and developing environmental farm plans in a number of Canadian provinces. Of these farm plans, 5,000-6,000 were completed in the province of Ontario. Producers have also developed codes of practice for the management of animal waste.

73. Through a national consultative process, a "Strategy for Environmentally Sustainable Agriculture and Agri-Food Development in Canada" was completed, reflecting an increased emphasis on pollution prevention and environmental stewardship among farmers and agri-food industries.

74. Research efforts by the Government, universities and industry include the development of disease- and pest-resistant crop varieties and reduction of pesticide use. The Government is also engaged in the development of agri-environmental indicators to help evaluate the sector's environmental performance, provide information on key trends and facilitate the integration of environmental considerations into the sector's decision-making process.

75. *The United States (1997 and 2000)*: recent legislation related to sustainable agriculture policy includes the Federal Agricultural and Improvement Act of 1996. This piece of legislation has extended the Conservation Reserve and Wetland Reserve Programmes until the year 2002. It also establishes the Environmental Quality Incentives Programme, which combines the functions of previous conservation programmes and improves community-based agenda-setting for natural resource issues within watershed areas. In addition, this Act established a new Farmland Protection Program for the purchase of conservation easements on farms ranging from 68,000 to 137,000 hectares so as to limit non-agricultural uses of land.

76. Initiatives to improve economic development of rural communities include efforts to increase farmers' income by developing and commercializing non-food, non-feed uses of traditional and non-traditional agricultural products. A revolving loan fund has also been established to encourage these interventions. In addition, farm legislation supports local Resource Conservation and Development Councils which consist of volunteers who design, fund and implement demonstration and capacity-building projects in rural communities.

77. More than 1,000 research grants have been provided to farmers and ranchers since 1988 through the United States Department of Agriculture's Sustainable Agriculture and Research Extension Program (SARE). Other initiatives include research on pests, pesticide resistance, biological controls, cultural controls and sterile insect release programmes.

78. Canada and the United States endeavour to help developing countries meet their Agenda 21 objectives. The Canadian International Development Agency (CIDA) has established a number of projects to promote environmentally sound farming practices and rural economic diversification in developing countries through community-level education and the introduction of appropriate technology. The International Development Research Centre (IDRC) supports research on food systems in regions where food security, poverty and environmental degradation are urgent matters. The United States Government has participated in the exchange of scientific personnel for education, training and cooperative efforts related to this topic. USAID has supported sustainable agricultural practices through the International Agriculture Research Centers (IARCs).

Asia

79. **Western Asia**: the following nations have submitted information on sustainable agriculture and rural development to the Commission on Sustainable Development: Bahrain (1997), Israel (1997 and 2000), Lebanon (1997), Qatar (1997), Saudi Arabia (1997 and 2000), and the Syrian Arab Republic (1997). Those that have not submitted information to the Commission include: Afghanistan, Cyprus, Jordan, the Islamic Republic of Iran, Iraq, Kuwait, the Libyan Arab Jamahiriya, Oman, the United Arab Emirates and Yemen.

80. Key concerns of the region include sustainable land use, agricultural productivity, conservation of water resources and integrated pest management. The conversion of degraded and non-arable land into more fertile land for cultivation is a major objective of this region.

81. Investment in the area of human resource development was recognized as necessary for pursuing the raising of living standards in general, as well as for facilitating an understanding of the ecosystem and its related agricultural production capacities. Saudi Arabia and Lebanon have ongoing human resource development programmes related to SARD, though Saudi Arabia reported a shortage of available domestic labour in the area of agricultural production. Lack of manpower and financial resources constrain the capacity of Israel's Ministry of Agriculture to routinely test for pesticide residues in produce designated for local consumption. As a result of Israel's recent drought, the Ministry of Environment is preparing guidelines for local farmers on purified waste-water irrigation.

82. Five of the seven countries are concerned with improving farm production and farming systems through diversification of farm and non-farm employment and infrastructure development. To this end, Qatar intends to focus on linkages with the fishing industry, while Israel encourages tourism, commerce and services for the purpose of promoting non-farm employment.

83. In Israel, public participation is considered crucial to the sound development of sustainable agriculture through linkages between government ministries, local authorities, the private sector, academic institutions and scientists. Representatives from the dairy-farming sector in Israel have been actively involved in a project concerning the environmental nuisances caused by geese-fattening. More than 300 farmers form part of the Israeli Bio-Organic Agriculture Association (IBOAA) in which produce from certified IBOAA growers is cultivated according to rigorous bio-organic principles.

84. Bahrain has undertaken bilateral, regional and international cooperation for the adoption of regulations regarding the safe use of chemicals. Other types of cooperation have been carried out in Saudi Arabia in the form of studies on the use of pesticides and mechanisms for the safe disposal of hazardous waste. The United States supports a project, involving representatives of Israel, Jordan, Egypt and the Palestinian Authority, that aims to better define the extent of adverse effects of pesticides on health in the Middle East and promotes the safe use of agricultural chemicals. An important element of the project is the establishment of a sophisticated laboratory for monitoring pest resistance to pesticides.

85. **East Asia**: China (1997 and 2000), Japan (1997 and 2000), Mongolia (1997 and 2000) and the Republic of Korea (1997 and 2000) submitted information to the Commission on Sustainable Development. Those that have not reported to the Commission include the Democratic People's Republic of Korea.

86. Priorities for the region include ensuring food security, increasing competitiveness in international agricultural markets, integrated pest management, and advancement of rural infrastructure and development schemes. Key challenges of the region include mitigating the negative effects of natural disasters on the agricultural sector, reducing the use of fertilizers and chemicals, lack of technological inputs, promotion of organic farming and conservation of water resources through appropriate irrigation methodologies.

87. Efforts to improve the quality of life of rural towns and augment the income of farmers have been undertaken in the region. In China, the rural workforce has been organized to work on infrastructure projects, with the objective of complementing the income of rural farmers thereby. Further efforts to increase non-farm employment opportunities were reported by the Republic of Korea through the creation of tourist farms and rural industrial complexes. Rural sewerage infrastructure facilities and small hydroelectric power systems for irrigation have been implemented in Japan.

88. The promotion of organic farming and organic products has been advanced in the region. In China, a national network for the production, management, quality control and technical supervision of "green food" has been formed, and green products are being produced for foreign consumption. Organic farming methods are being practised in Japan and the Republic of Korea. Mongolia's Ministry of Agriculture and Industry is increasing water supply for the rural population, livestock and agricultural production, as well as providing nomadic populations with the necessary equipment for watermills.

89. Major groups play a role in SARD in the region. In Japan, farmers, consumers, distributors, researchers, academics and women form part of the National Council for Sustainable Agriculture, which endeavours to achieve targets of sustainable agriculture, promote related activities and establish a charter. The Republic of Korea reported that major groups participate as members of the committee on sustainable agriculture. Civil society participation in Mongolia was initiated with the formulation of national and local Agendas 21. Mongolia's Aimag/Capital City Sustainable Development Advisers have organized workshops and seminars in Aimag centres and rural areas in order to introduce the concept of sustainable development to non-governmental organizations, the private sector, government officials, academics and herders. Mongolian youth have increased their participation in various movements in recent years, including those that cover environmental and sustainable development issues.

90. The region is active in advancing activities to promote sustainable agricultural practices through education and training. The Republic of Korea has developed programmes to train farmers in integrated pest management (IPM) and to assist farmers who are willing to learn organic farming. Promotion of vocational training to increase agricultural production is being undertaken by China. Through formal and non-formal education, ordinary labourers under age 50 and students at the primary and secondary school levels are given "green certificates" with the aim of enhancing the adoption of new agricultural technologies. Japan reported that farmers adopt farming systems that are appropriate in relation to climatic and topographic characteristics through training courses and the guidance of experts.

91. Evaluation of the effect of ultraviolet radiation on plant and animals has been undertaken through research projects in Japan and the Republic of Korea.

92. **South-East Asia**: countries that have submitted information to the Commission on Sustainable Development include: Indonesia (1997), Malaysia (1997), Myanmar (2000), the Philippines (1997), Singapore (1997 and 2000), Thailand (1997) and Viet Nam (1997). Those that have not provided information to the Commission include: Brunei Darussalam, Cambodia and the Lao People's Democratic Republic.

93. Priorities for the region include measures to promote sustainable food security, rehabilitation of degraded land, soil conservation, and water resource management. Environmental considerations are prominent in agricultural policies and programmes.

94. Countries did not report on the existence of an integrated national agricultural policy framework, while most countries of the region referred to ongoing programmes and projects.

95. Integrated pest management programmes have been developed in Indonesia, Myanmar, Singapore, the Philippines and Thailand. Integrated pest management is a priority in Malaysia. In the Philippines, rice and vegetable farmers have received integrated pest management training from specialists in the Department of Agriculture.

96. Indonesia and Thailand cited increasing community participation and development of human resource capacities to promote self-reliance. Target groups include children, youth, women, community volunteers and local leaders. The Government of Singapore reported on the existence of education programmes and extension services for farmers. Myanmar's Ministry of Agriculture and Irrigation had launched an Integrated Rural Development Pilot Programme (IRDPP) to provide technical advice and training to farmers.

97. The establishment of Village Data Systems by local communities to guide Rural Development Plants has been undertaken in Thailand. The National Nutrition Centre of Myanmar conducts country-wide surveys to access nutritional status, and household and individual food consumption patterns for all age groups.

98. **South Asia**: India (1997), Nepal (1997), Pakistan (1997) and Sri Lanka (1997) have provided national

information on sustainable agriculture to the Commission on Sustainable Development. The following nations within the region have not provided information to the Commission: Bangladesh, Bhutan and Maldives.

99. Priority areas of the region are related to rural poverty alleviation and integrated rural development, ensuring food security, increasing farmer income and increasing land productivity. Key challenges include: provision of technology and infrastructure to support agricultural production, development of human resource capacity and provision of equipment to support scientific research in biotechnology, genetic improvement of crops and other, related issues.

100. Rural poverty alleviation schemes have been incorporated into broader agriculture and rural development strategies. In addition to direct intervention of the State, India reported on the creation of self-employment and supplementary wage employment programmes for the rural poor. Training, upgrading of technology and basic services are being provided to the rural poor in India. Development of infrastructure in rural areas has been undertaken in Pakistan through the "Matching Grants Programme" which aims to raise socio-economic standards, and awareness about hygiene and environmental conditions, and to address other agriculture-related issues.

101. People's participation in sustainable agricultural and rural development has made advances in India, Nepal, Pakistan and Sri Lanka. In India, the promotion of people's participation has been catalysed through the training of "Animators", who mobilize the rural poor to articulate their needs and aspirations and form organizations. Rural youth, women and children also benefit from training. In Pakistan, strategies to ensure food security, address the issue of rural welfare and develop the institutional capacity to address the issue of plant genetic resources, include women, indigenous people, local communities and non-governmental organizations, while local communities and non-governmental organizations are taken into consideration in the review of international trade relations and agricultural production. Through decentralization initiatives, Nepal endeavours to promote participatory decision-making by incorporating the private sector, farmers and non-governmental organizations in the formulation and monitoring of its national sustainable development plans. Farmers associations have been established in Sri Lanka.

102. Integrated pest management is also a concern for the region. Issues related to pest management were reported by India, Nepal, Pakistan and Sri Lanka. The application of traditional botanical pesticides has been incorporated into the national policy in Nepal, which reported success in crop protection. Initiatives to promote integrated pest management in Sri Lanka have contributed to a reduction in the use of pesticides. The need to reduce dependence on fertilizer imports by improving output and productivity in fertilizer production units was reported by India. The overuse of synthetic chemicals in agricultural production remains a challenge for Pakistan.

103. **The Pacific and Oceania**: the following countries have submitted information to the Commission on Sustainable Development: Australia (1997 and 2000), Fiji (1997) and New Zealand (1997). Those countries that have not submitted information to the Commission include: Kiribati, the Marshall Islands, Micronesia, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu.

104. Australia, Fiji and New Zealand have introduced sustainable development programmes in their countries to deal with both agricultural development and environmental conservation.

105. Australia and New Zealand have advanced SARD through relevant national policies and programmes. Australia's National Strategy for Ecologically Sustainable Development acknowledges the important nexus between international trade and its impact on the environment, while providing the policy framework for the promotion of SARD by all levels of government. In line with its emphasis on trade liberalization, Australia's SARD policy has shifted from price-related assistance towards market-oriented policies. The Government has progressively reduced protection measures, and programmes have been developed to raise awareness among farmers and rural communities of the nature and extent of the changes that they must make to implement practices that are self-reliant, ecologically sustainable and economically viable. New Zealand's Integrated Rural Development Programme provides policy advice to industry and others, recognizing the need for comprehensive rural infrastructure to ensure the maintenance of essential facilities and servicing support to agriculture. In

addition, the Programme seeks to facilitate rural development through consultations with industry and communities' leaders to promote actions based on these consultations.

106. International cooperation and assistance are important for the region. With the assistance of the Japan International Cooperation Agency (JICA), Fiji's Land and Water Resource Management Division conducted thorough research on Fiji's watershed catchment areas in order to formulate a Watershed Management Master Plan. The Australian Centre for Agricultural Research promotes collaborative research among Australian scientists and their developing country counterparts on key aspects of sustainable agriculture including: land, forest and water management; improved animal husbandry; more effective agronomic practices; and minimization of toxic chemical inputs, among others. In addition, Australia has participated in international efforts to improve world food security through humanitarian relief, technology transfer, and investing in developing-country infrastructure, among other interventions.

III. Future challenges

107. The following lists summarize the most pressing global challenges to SARD, as reported to the Commission on Sustainable Development by national Governments.[7]

108. **Food security and improvement of farming systems:**

- It is deemed necessary to improve information on early warning systems for food and agriculture at regional and national levels;
- Regional and global cooperation should be intensified to encourage more open and non-discriminatory trading systems;
- Although initiatives are currently being undertaken, countries need to further emphasize the need for diversification of agricultural crops for internal consumption, as well as for export;
- Greater emphasis should be placed on improving food production systems through better storage facilities, monitoring of production and distribution, physical infrastructure to transport goods to markets, and provision of information to producers on market prices;
- Non-farming employment opportunities for the rural poor need to be created;
- The transfer of environmentally sound technology and know-how to farmers should be facilitated;
- Cooperation, capacity-building, research and development should be reinforced at both national and international levels for the conservation of plant and animal genetic resources.

109. **Ensuring people's participation:**

- Emphasis on administrative and fiscal decentralization for SARD is needed to reorient decision-making to the local level. Regional and local institutions need to be strengthened;
- Ongoing provision of training, extension and capacity development to local authorities, farmers, women, indigenous groups, and others is needed;
- To encourage individuals and communities to invest in land resources, the assignment of clear titles, rights and responsibilities for land is needed.

110. **Natural resource planning and conservation:**

- There exists an urgent need for policies and programmes to block land degradation, soil erosion and soil fertility mitigation, in both developed and developing countries;
- Land resource mapping and survey units should be improved at the local, regional and national levels;
- National research institutions need to be strengthened so as to improve national capacity to design and implement land conservation and reclamation projects and programmes;
- In order to reduce the use of chemical pesticide use in agriculture, more emphasis is needed so as to make integrated pest management practices available to farmers;
- The development of the integrated plant nutrition approach to increase future yields without harming soil productivity or the environment is needed;
- Programmes and pilot projects need to be implemented to promote the use of new and

renewable sources of energy to support rural households and farm production.

Notes

[1] *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992*, vol. I, *Resolutions Adopted by the Conference* (United Nations publication, Sales No. E.93.I.8 and corrigendum), resolution 1, annex II.

[2] See *Official Records of the Economic and Social Council, 1999, Supplement No. 9* (E/1999/29), chap. I, sect. C.

[3] Ibid., *1998, Supplement No. 9* (E/1998/29), chap. I, sect. B.

[4] The Phare Programme is a financial instrument of the pre-accession strategy of the European Union (EU) which aims to help partner countries of Central and Eastern Europe gain full membership. The main priorities for funding include: agriculture, private sector development, reform of institutions, legislation and public administration, reform of social services, employment education and health, development of energy, transport and telecommunications infrastructure, and environment and nuclear safety.

[5] EU member States include the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom of Great Britain and Northern Ireland.

[6] The EU Rural Development Regulation seeks to simplify the framework for supporting rural agriculture by combining nine former regulations into one so as to provide a wide range of schemes that are available to member States. This Regulation also lays the foundation for a new European framework in which reforms in the agricultural commodity sectors will be complemented by more closely integrated measures to support rural development and protect the environment.

[7] Matters related to the impact of El Niño/La Niña on agriculture will be addressed in a separate report to be submitted by the Office for the Coordination of Humanitarian Affairs of the United Nations Secretariat to the General Assembly at its fifty-fifth session through the Commission on Sustainable Development and the Economic and Social Council.

Annex

Main priorities/challenges, activities and programmes in SARD reported by region

	Eastern Europe/ Commonwealth of Independent States	*Western Europe*	*East Africa*	*West Africa*	*Southern Africa*	*North Africa*	*Central Africa*
Main priorities/ challenges	Food security Privatization of agriculture Efficient production and marketing of agricultural products Soil erosion Pollution of water resources	Sustainable farming Rural development Pollution of water resources Stabilization of nitrate levels	Land management and policy Food security	Food security Diversification of agricultural products and exports Recuperation of degraded land Farmer self-sufficiency Forestry Capacity-building in area of water resources	Food security Drought Soil infertility Land degradation Increase in agricultural productivity Sustainable fertilizer strategies Farmer self-sufficiency	Food security Integrated land management Desertification and drought Water resources management Forest management Rural development	No information provided
Main activities and programmes	Integrated pest management Education and extension Decentralized decision-making	Fiscal and other incentives to encourage sustainable farming Protection of livestock breeds Renewable energy People's participation	Integrated pest management Renewable energy Land tenure review Major group activities	Participation of women, local communities and young farmers in SARD	Land tenure/ agrarian reform Rural development Credit facilities Soil surveys/ mapping Participation of farmers, universities, non-governmental organizations	Participation of women, youth and non-governmental organizations in SARD Decentralized decision-making and participatory approaches cited	No information provided

	Caribbean	*Latin America*	*Canada and United States of America*	*Western Asia*	*East Asia*	*South-East Asia*	*South Asia*	*The Pacific and Oceania*
Main priorities/ challenges	Conservation of water resources	Rural poverty alleviation Decentralization Food security Strengthening of agricultural products in the market place Land tenure/ agrarian reform	Soil conservation Management of water resources Energy efficiency Pollution and waste prevention Protection of wildlife Genetic resources Increase in farmer income	Sustainable land use Agricultural productivity Water resource conservation Integrated pest management	Food security Competitiveness in agricultural markets Integrated pest management Rural development Reduction of effects of natural disasters Reduction in use of fertilizers	Food security Rehabilitation of land and soils Water resource management	Rural poverty alleviation Rural development Food security Increasing farmer income Increasing land productivity	Human resource development People's participation Competitiveness of farm systems Rural development
Main activities and programmes	Research and development in genetics, appropriate technology Women's and youth's engagement in SARD activities	Farmer self-sufficiency Animal and plant genetic resources Major group participation in SARD	Purchase of conservation easements Research on pests Participation of donor countries	Human resource development programmes Diversification of farm and non-farm employment Participation of major groups	Organic farming Active involvement of major groups in SARD Education and training	Integrated pest management People's participation Human resource development: children, youth, women	People's participation Integrated pest management	Land-use conservation strategies Reduction of soil loss Promotion of education for SARD Integrated pest management Promotion of rural industries and development of the farm sector Partnerships among public and civil society for SARD